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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/065,585	10/31/2002	Lung-Sheng Lee	FTCP0013USA	9765

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EXAMINER	
O'CONNOR, BRIAN T	

ART UNIT	PAPER NUMBER
2619	

NOTIFICATION DATE	DELIVERY MODE
03/21/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/065,585	LEE ET AL.	
	Examiner	Art Unit	
	BRIAN T. O'CONNOR	2619	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 December 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-13* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-13* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Art Unit: 2619

DETAILED ACTION

Response to Amendment

1. This office action is in response to applicant's amendment filed on 12/21/2007.

2. Claims 1 and 11 have been amended. Claims 1-13 are currently pending.

Claim Rejections - 35 USC § 103

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. Claims 1, 3, 4, 7, 8, 10, 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishifuji et al. (US 6,061,139; hereafter Ishifuji) in view of Mansfield (U.S. 6,704,346).

With respect to claim 1, Ishifuji discloses a radio device (500 of figure 5) that changes frequencies according to a pattern or look-up table (521 of figure 5) at regular time slots (Hopped frequency of Mobile Station in figure 11). The radio device comprises a receive-state register set (530 of figure 5; column 10, line 66—column 11, line 12; where this operational state is viewed as a standby link state);

a transmit-state register set (521 of figure 5; column 10, lines 58-6; where this operational state is viewed as a connection link state);

a switch or multiplexer (532 of figure 5) that connects the output of the two register sets or tables for selection of either table;

a link state controller (531 of figure 5; column 10, line 66—column 11, line 3) to selection which table is connected to the synthesizer (111 of figure 5);

a synthesizer (111 of figure 5) which must have a working register set to receive the selected frequency channel parameters from the switch; and

a synthesizer (111 of figure 5) or frequency channel controller to control the oscillators (103, 107 of figure 5) according to the selected frequency channel parameters.

Ishifuji discloses that the frequency hopping pattern tables (521, 531 of figure 5) are stored with frequency control words (221 of figure 7B; column 9, line 66—column 10, line 13) that must be controlled with a periodic timer to read out the entire list of frequencies.

However, Ishifuji fails to explicitly disclose that the link state controller switches the multiplexer according to the link state of the radio device for the next timeslot so that certain frequency parameters are loaded into the working register set; and when the link state of the radio device changes in the current time slot the selected frequency parameters for the next time slot are loaded into the working register set in the current time slot.

Mansfield, in an invention for Bluetooth device (column 1, lines 8-18), discloses a frequency control and programming technique where a mechanism (Figure 5) selects a frequency for a Bluetooth transceiver (48 of Figure 5) over a number of time slots (52, 56, 58 of Figure 6) while checking for frequency interference (44 of Figure 5). A look-ahead selection box (32 of Figure 5; column 7, lines 48-55) chooses a frequency and loads that frequency in a series of registers (76 of Figure 7; column 8, lines 55-65) that end with a working register (Register F_N of Figure 7). The state of the mechanism is controlled by the Interference box (44 of Figure 5) and the Look-Ahead selection box (32 of Figure 5).

Mansfield realizes the advantage of reduced interference in a Bluetooth system (column 3, lines 40-48) by avoiding interference frequencies and then reconfiguring the transmitting frequencies for the next time slot. Thus it would have been obvious to one of ordinary skill in the art at the time of the invention to use the technique of Mansfield with the radio device (Bluetooth system) of Ishiuji.

With respect to claim 3, Ishifuji further discloses that the frequency control parameters are loaded into the synthesizer ahead of the next time slot as set by the periodic timer (column 14, lines 13-22).

With respect to claim 4, Ishifuji further discloses an RF device (107, 117, 152, 118, 117, 101 of figure 5) connected to the synthesizer to transmit and receiver radio signals according to the synthesizer.

With respect to claim 7, Ishifuji further discloses a different set of frequencies for each state (226 of figure 7A; 221 of figure 7B).

With respect to claim 8, Ishifuji further discloses a base station (402 of figure 1) or second radio device which sets the frequency hopping pattern by transmitting a base station ID (743 of figure 6) in a control packet. The base station also controls the transmit operational state of the mobile station with a right designation code (704 of figure 6) in the control packet.

With respect to claim 10, Ishifuji further discloses m sets of link states as hopping pattern IDs (221 of figure 7B) which are connect to m sets of frequency sequences (HFP1, HFP2 of figure 7B) used to control frequency transmit parameters in the transmit-state of the mobile station.

With respect to claim 11, Ishifuji discloses a method for controlling the operational state of a mobile station comprising the steps of:

storing receiving (standby) frequency parameters (226 of figure 7A) in a register set (530 of figure 5);

storing transmitting (connection) frequency parameters (221 of figure 7B) in a register set (521 of figure 5);

selecting the transmitting frequency parameters during the transmission state (column 14, lines 13-22);

selecting the receiving frequency parameters during the reception state (column 10, line 66—column 11, line 12); and

inputting the selected frequency channel parameters into a synthesizer (111 of figure 5) before the start of the next time slot for controlling the mobile station (column 10, line 66—column 11, line 3).

However, Ishifuji fails to explicitly disclose steps where the link state controller switches the multiplexer according to the link state of the radio device for the next timeslot so that certain frequency parameters are loaded into the working register set; and when the link state of the radio device changes in the current time slot the selected frequency parameters for the next time slot are loaded into the working register set in the current time slot.

Mansfield, in an invention for Bluetooth device (column 1, lines 8-18), discloses a frequency control and programming technique where a mechanism (Figure 5) selects a frequency for a Bluetooth transceiver (48 of Figure 5) over a number of time slots (52, 56, 58 of Figure 6) while checking for frequency interference (44 of Figure 5). A look-ahead selection box (32 of Figure 5; column 7, lines 48-55) chooses a frequency and loads that frequency in a series of registers (76 of Figure 7; column 8, lines 55-65) that end with a working register (Register F_N of Figure 7). The state of the mechanism is controlled by the Interference box (44 of Figure 5) and the Look-Ahead selection box (32 of Figure 5).

Mansfield realizes the advantage of reduced interference in a Bluetooth system (column 3, lines 40-48) by avoiding interference frequencies and then reconfiguring the transmitting frequencies for the next time slot. Thus it would have been obvious to one of ordinary skill in the art at the time of the invention to use the technique of Mansfield with the radio device (Bluetooth system) of Ishiuji.

With respect to claim 12, Ishifuji further discloses a periodic timer or timer counter to synchronize all the steps (column 13, line 55—column 14, line 10).

5. Claims 2, 5, 9 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishifuji in view of Mansfield and further in view of Belanger et al. (U.S. 5,729,680 hereafter Belanger).

With respect to claims 2 and 13, Ishifuji does not disclose a software interrupt service routine (ISR) used to determine the operational state of the mobile station from one time slot to the next.

Belanger discloses a software ISR used to determine the operational state of the mobile station from one time slot to the next (column 9, line 63—column 10, line 11; where the MEDIAISR.ASM controls the transmission and reception of frame and thereby must control the operational state of the mobile unit).

Belanger realizes the benefit of greater design flexibility and customization by using software to control hardware elements in a mobile unit. Thus it would have been obvious to one of ordinary skill in the art at the time of the invention to use the ISR of Belanger with the system of Ishifuji.

With respect to claim 5, Ishifuji does not disclose delaying the switching operation by the RF settling time of the RF device.

Belanger discloses delaying the switching operation by the RF settling time of the RF device (column 38, line 38—column 39, line 18).

Belanger realizes the benefit of more stable RF transmission and reduced error by waiting for the RF devices to settle before sending new commands to them. Thus it would have been obvious to one of ordinary skill in the art at the time of the invention to use the extra delay time of Belanger with the system of Ishifuji.

With respect to claim 9, Ishifuji does not disclose that when in a transmission state the periodic timer is created by and received from a second radio device.

Belanger discloses that when in a transmission state the periodic timer is created by and received from a second radio device (column 23, lines 19-30; where the HOP TICK field is send from an access point unit or second radio device and is used to change frequencies in the hopping pattern).

Belanger realizes the benefit of faster synchronization between mobile units and access point units by using a HOP TICK field. Thus it would have been obvious to one of ordinary skill in the art at the time of the invention to use the HOP TICK field of Belanger with the system of Ishifuji.

6. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ishifuji in view of Mansfield and further in view of Orava (U.S. 6,829,288).

With respect to claim 6, Ishifuji does not disclose designed the mobile station according to the Bluetooth system standard.

Orava discloses conforming the design of wireless devices to Bluetooth technology standards (column 2, lines 4-19).

Orava realizes the benefit of enhanced transmission security by complying with the Bluetooth standard (column 1, lines 42-67). Thus it would have been obvious to one of ordinary skill in the art at the time of the invention to use the Bluetooth standard as taught by Orava with the system of Ishifuji.

Response to Arguments

3. Applicant's arguments filed on 12/21/2007 have been fully considered but they are not persuasive.

A. Applicant argues, on pg 7 (first full paragraph), with respect to claims 1 and 11 that "the selected frequency parameters for the next time slot are loaded in to the working register set (which feeds the frequency channel controller) during the current time slot and before the next time slot starts".

The Examiner has cited Mansfield as disclosing a number of time slots (52, 56, 58 of Figure 6) and a series of working registers (registers, 76 of Figure 7) which are driving by a Look-ahead frequency selection box (32 of Figure 5) to change frequency parameters in a Bluetooth transceiver. Mansfield is cited to address the features in claims 1 and 11 amended on 12/21/2007.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to BRIAN T. O'CONNOR whose telephone number is (571)270-1081. The examiner can normally be reached on 9:00AM-6:30PM, M-F, 1st Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on 571-272-3088. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2619

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/BTO/
Brian T. O'Connor
March 12, 2008
Patent Examiner

/Hassan Kizou/

Supervisory Patent Examiner, Art Unit 2619